



RELEASED ITEMS

**MATHEMATICS
GRADE 3**

Fall 2007

**MICHIGAN STATE BOARD OF EDUCATION
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PART 1

DIRECTIONS

This test has three parts. You may **NOT** use a calculator on the first part. You may use open space in this test booklet for scratch paper.

The items on this test are all multiple-choice. Multiple-choice items require you to choose the best answer from among three answer choices. Mark your answer in your test booklet by completely filling in the bubble next to the correct answer. Use only a No. 2 pencil to mark your answer in your test booklet. If you erase an answer, be sure to erase it completely.

Be careful not to make any marks in the bubbles next to the letters A, B, or C except for the one that goes with your answer. You may **NOT** use any other paper to do your work.

Sample Multiple-Choice Item:

Julia had \$5.00. She spent \$2.54. How much money did she have left?

- ☐ A \$7.54
- ☐ B \$3.54
- ☒ C \$2.46

For this sample item, the correct answer is **C**. Circle **C** is filled in on the sample item in your test booklet.

You will have at least 35 minutes to finish Part 1 of this test. You will be given additional time if necessary.

1. Once you have reached the word STOP in your test booklet, do **NOT** go on to the next page.
2. If you finish early, you may check your work in Part 1 of the test **ONLY**.
3. Do **NOT** look at items in other parts of the test.

If you do not understand any of these directions, please raise your hand.

1 Which shows eight hundred fifty-two in standard form?

⊖ **A** 800,502

⊖ **B** 80,052

⊖ **C** 852

2 Read and write numbers to 1000

A place value error

B place value error

C correct

3 Which shows seven hundred sixty-two in standard form?

⊖ **A** 762

⊖ **B** 7,062

⊖ **C** 70,062

4 Compare and order numbers to 1000

- A place value error or confused greater than with less than
- B place value error or confused greater than with less than
- C correct

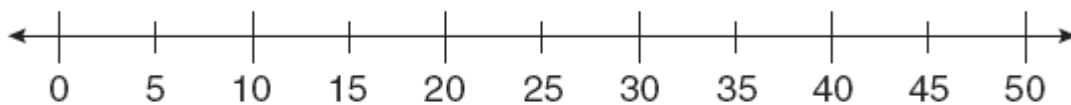
5 Which statement is true?

- ⊖ A $38 > 23$
- ⊖ B $38 < 23$
- ⊖ C $38 > 38$

6 Compare and order numbers to 1000

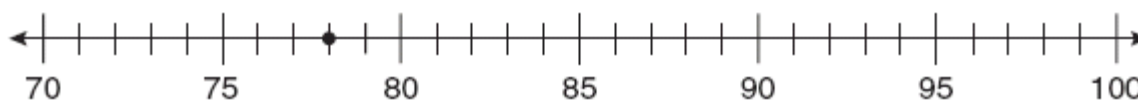
- A place value error or confused greater than with less than
- B place value error or confused greater than with less than
- C correct

- 7 What is the distance between 35 and 50 on the number line?



- ⊖ A 15
- ⊖ B 25
- ⊖ C 85
- 8 Find distance between numbers on a number line
- A subtraction error in ones place
- B subtraction error in ones place
- C correct

- 9 Mikaela counted by 1s on a number line. She started at 78 and counted up 15 numbers.



At what number should she have stopped?

- ⊖ **A** 85
- ⊖ **B** 93
- ⊖ **C** 94
- 10 Add, subtract fluently two numbers through 99
- A** subtracted smaller face values from greater face values
- B** subtraction error in tens place
- C** correct

- 11 Subtract $63 - 25$

- ⊖ **A** 38
- ⊖ **B** 42
- ⊖ **C** 48

12 Add, subtract fluently two numbers through 99

- A** addition error in tens place
- B** addition error in ones place
- C** correct

13 Nadia had 230 jelly beans in her jar. Jamal had 560 jelly beans in his jar. Which is *closest* to the total number of jelly beans in the two jars?

- ⊖ **A** 700
- ⊖ **B** 800
- ⊖ **C** 900

14 Estimate sum of two numbers with three digits

- A** rounded down by an extra 100
- B** truncated instead of rounded
- C** correct

15 Which of the following is *closest* to the result of $580 - 200$?

- ⊖ **A** 400
- ⊖ **B** 600
- ⊖ **C** 800

16 Recognize, name and write halves, thirds and fourths

- A** non-shaded region (instead of shaded)
- B** ratio of non-shaded to shaded
- C** correct

17 What fractional part of the shape below is shaded?



Ⓐ $\frac{1}{4}$

Ⓑ $\frac{1}{3}$

Ⓒ $\frac{3}{4}$

18 Recognize, name and write halves, thirds and fourths

- A** reciprocal
- B** whole number
- C** correct

19 Kyle's bean plant is 21 inches tall. Julia's bean plant is 13 inches tall. How many inches would Julia's bean plant have to grow to be the same height as Kyle's bean plant is now?

- Ⓐ 8 inches
- Ⓑ 12 inches
- Ⓒ 34 inches

20 Compare, add, subtract lengths

- A** less than values in range
- B** correct
- C** greater than values in range

21 Which of the following represents the *greatest* length?

- ⊖ **A** 3 inches
- ⊖ **B** 3 feet
- ⊖ **C** 3 yards

22 Solve simple word problems in length & money

- A** correct
- B** addition error in dollars place
- C** subtracted instead of added

23 Crystal's jump rope is 72 inches long. Lark's jump rope is 60 inches long. How much *longer* is Crystal's jump rope than Lark's?

- ⊖ **A** 12 inches
- ⊖ **B** 60 inches
- ⊖ **C** 132 inches

24 Solve simple word problems in length & money

- A** added different types of measurements
- B** added different types of measurements
- C** correct

PART 2

DIRECTIONS

You will now begin Part 2 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper.

You will have at least 50 minutes to finish Part 2 of this test. You will be given additional time if necessary.

Be careful not to make any marks in the bubbles next to the letters A, B, or C except for the one that goes with your answer. You may **NOT** use any other paper to do your work.

If you finish early, you may check your work for Part 2 **ONLY**.

Do **NOT** look at items in other parts of this test.

25 April made 59 cookies. She gave 30 of the cookies to her brothers and sisters. How many cookies did she have left then?

- Ⓐ 29
- Ⓑ 39
- Ⓒ 89

26 Solve story problems with objects & pictures

- Ⓐ added instead of subtracting
- Ⓑ correct
- Ⓒ omitted one of the addends

27 Mark and Bailey each caught 1 fish.

- Mark's fish was 48 inches long.
- Bailey's fish was 22 inches longer than Mark's fish.

Which number sentence can be used to determine the length in inches of Bailey's fish?

- Ⓐ $12 + 10 = ?$
- Ⓑ $48 - 22 = ?$
- Ⓒ $48 + 22 = ?$

28 Represent multiplication using area and array models

- A** one incorrect factor in array
- B** correct
- C** represented addition

29 Which of the following is represented by the model below?

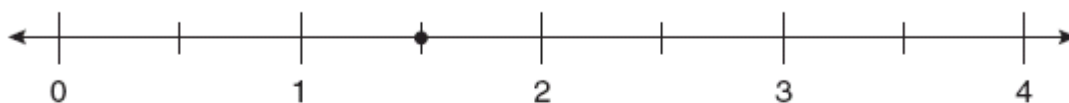


- ⊖ **A** $4 + 4$
- ⊖ **B** 3×4
- ⊖ **C** $3 + 4$

30 Represent multiplication using area and array models

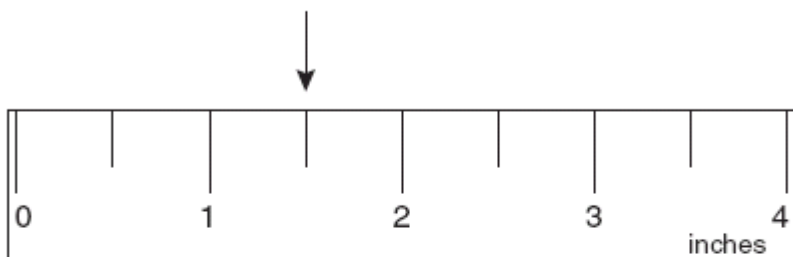
- A** twice the number of required columns
- B** one extra column
- C** correct

- 31 Which appears to be the location of the point marked on the number line below?



- Ⓐ 1
- Ⓑ $\frac{1}{2}$
- Ⓒ $1\frac{1}{2}$
- 32 Place 0 and halves on number line; relate to a ruler
- Ⓐ subtracted one from correct value or started from correct whole number and subtracted one-half
- Ⓑ correct
- Ⓒ added one to correct value location

33 To what number does the arrow appear to be pointing?



Ⓐ 3

Ⓑ $2\frac{1}{2}$

Ⓒ $1\frac{1}{2}$

34 Tell time using A.M. and P.M.

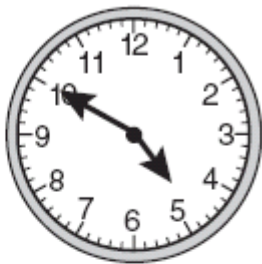
A correct

B reverses minute and hour hands

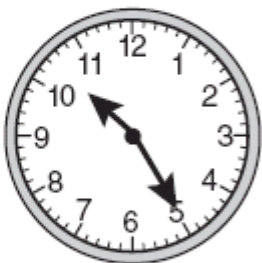
C counts 5-minute intervals as one-minute intervals

35 Which clock appears to show a time of 4:50?

⊖ **A**



⊖ **B**



⊖ **C**



36 Tell time using A.M. and P.M.

- A** both hour minute hand incorrect
- B** both hour minute hand incorrect
- C** correct

37 Andy bought a ruler that cost eighty cents. Which of the following represents eighty cents?

Ⓐ **A** \$8.00

Ⓑ **B** \$0.80

Ⓒ **C** \$0.08

38 Read & write money using decimal notations

A amount in cents

B amount shown uses both dollar and cent signs

C correct

39 Which of the following represents fifty cents?

Ⓐ **A** \$50.00

Ⓑ **B** 50¢

Ⓒ **C** \$0.50¢

40 Classify familiar plane and solid objects

A correct

B described 2-D object

C described 2-D object

41 Which shape has a curved surface?

- ☐ **A** sphere
- ☐ **B** prism
- ☐ **C** cube

42 Classify familiar plane and solid objects

- A** shape with different characteristics
- B** correct
- C** shape with different characteristics

PART 3

DIRECTIONS

You will now begin Part 3 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper.

You will have at least 50 minutes to finish Part 3 of this test. You will be given additional time if necessary.

Be careful not to make any marks in the bubbles next to the letters A, B, or C except for the one that goes with your answer. You may **NOT** use any other paper to do your work.

If you finish early, you may check your work for Part 3 **ONLY**.

Do **NOT** look at items in other parts of this test.

43 Which of the following has the same value as $3 + 3 + 3 + 3$?

⊖ **A** 4×3

⊖ **B** $4 + 3$

⊖ **C** 3×3

44 Recognize multiplication as total number in a set of equal groups

A incorrect number of elements and groups

B correct

C incorrect number of elements and groups

45 Which of the following has the same value as 4×4 ?

⊖ **A** $4 + 4$

⊖ **B** $4 + 4 + 4$

⊖ **C** $4 + 4 + 4 + 4$

46 Use common unit fractions

A incorrect denominator

B correct

C ratio of numerator to denominator

47 Each section of the figure below is the same size.



What fractional part of the figure is shaded?

Ⓐ $\frac{1}{3}$

Ⓑ $\frac{1}{4}$

Ⓒ $\frac{3}{4}$

48 Use common unit fractions

- Ⓐ model shown had different-sized sections
- Ⓑ model shown had different-sized sections
- Ⓒ correct

49 To the *nearest* centimeter, what is the length of the worm in the picture?

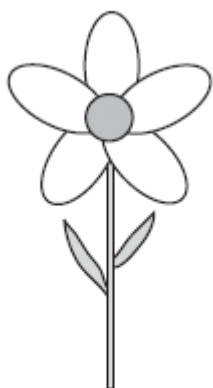


- Ⓐ 4 centimeters
- Ⓑ 5 centimeters
- Ⓒ 6 centimeters

50 Measure lengths to nearest whole unit

- A measured with cm instead of inches
- B one inch too long
- C correct

51 What is the height of the flower to the *nearest* centimeter?



- ⊖ A 4 cm
- ⊖ B 5 cm
- ⊖ C 6 cm =

52 Use the concept of duration of time

- A correct
- B added incorrect amount to time shown
- C added incorrect amount to time shown

53 Erika began eating dinner at 6:15. She finished eating at 6:40.



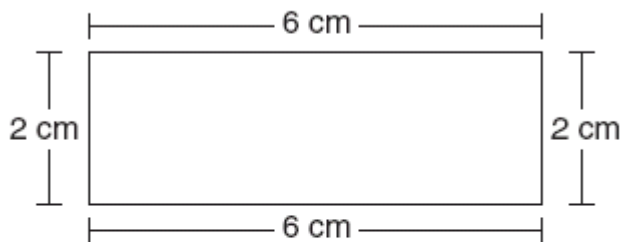
How long did it take Erika to eat dinner?

- Ⓐ 35 minutes
- Ⓑ 30 minutes
- Ⓒ 25 minutes

54 Use the concept of duration of time

- A added incorrect amount of time
- B correct
- C Added incorrect amount of time

55 What is the perimeter of the shape below?

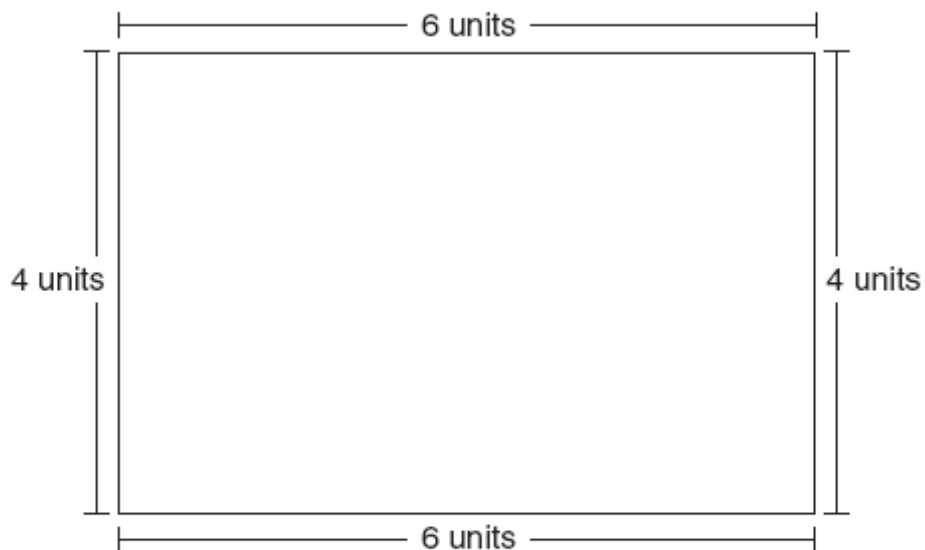


- Ⓐ 8 cm
- Ⓑ 14 cm
- Ⓒ 16 cm

56 Determine perimeters of rectangles & triangles

- A correct
- B added lengths of two sides of triangle
- C length of one side of triangle

57 What is the perimeter of the rectangle below?



- Ⓐ 20 units
- Ⓑ 22 units
- Ⓒ 24 units

58 Identify, describe, compare 2-D & 3-D shapes

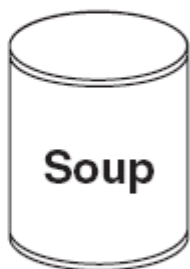
- A correct
- B incorrect 2-D shape
- C incorrect 2-D shape

59 Which appears to be a sphere?

⊖ A



⊖ B



⊖ C

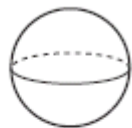


60 Identify, describe, compare 2-D & 3-D shapes

- A incorrect 3-D shape
- B incorrect 3-D shape
- C correct

61 Which shape appears to have *only* flat surfaces?

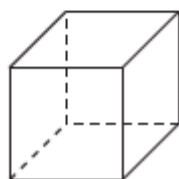
⊖ **A**



⊖ **B**



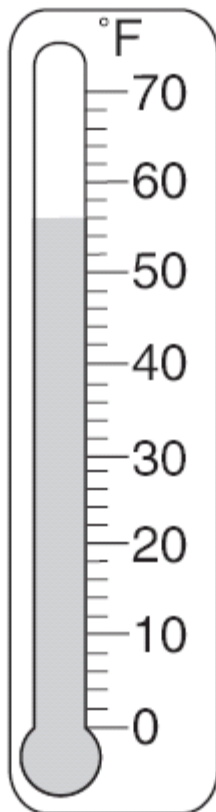
⊖ **C**



62 Measure area using non-standard units

- A** not enough units
- B** not enough units
- C** correct

63 What appears to be the temperature shown on the thermometer below?



- Ⓐ 53°F
- Ⓑ 56°F
- Ⓒ 58°F

64 Decompose 100 into addition pairs, e.g., $99 + 1$

- A under
- B correct
- C over

65 Jake had 6 vases. He bought 10 flowers to put in each vase.



How many flowers did he buy all together?

- ⊖ A 6
- ⊖ B 16
- ⊖ C 60

66 Solve problem such as $42 + \underline{\quad} = 57$

- A under
- B correct
- C over

67 Tate, Jerry, and Cindy are going to share 6 cupcakes equally. Which of the following represents the number of cupcakes each should receive?



















68 Make pictographs using a scale representation

- A scale not used
- B correct
- C scale factor

69 The graph below shows the number of cartons of milk sold in a lunchroom each day last week.

Cartons of Milk Sold Last Week

Day	Number of Cartons Sold
Monday	   
Tuesday	 
Wednesday	  
Thursday	    
Friday	

Key: Each  represents 2 cartons sold.

What was the total number of cartons of milk sold on Monday?

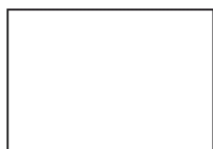
- Ⓐ 4
- Ⓑ 6
- Ⓒ 8

70 Solve problems using info in pictographs

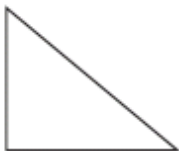
- A** correct
- B** misread question and scale not used
- C** scale not used

71 Which of these shapes can be cut into 2 rectangles with no parts left over?

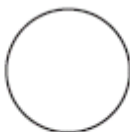
⊖ **A**



⊖ **B**



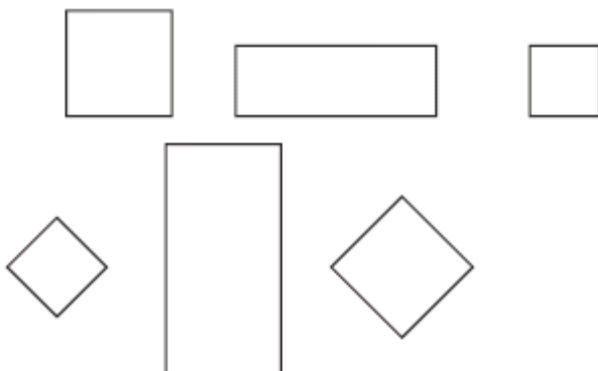
⊖ **C**



72 Find, name points using simple coordinate systems

- A** went west instead of east
- B** correct
- C** went north instead of east and west instead of south

73 How many of the shapes in the group below appear to be squares?

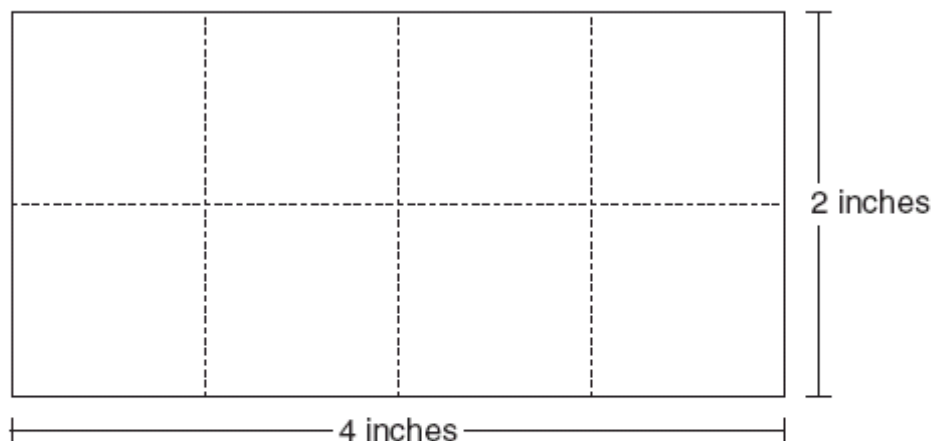


- Ⓐ 2
- Ⓑ 3
- Ⓒ 4

74 Add and subtract money in mixed units

- A correct
- B subtracted from ones place instead of tens place
- C added instead of subtracted

75 What is the area of the large rectangle pictured below?



- Ⓐ 4 square inches
- Ⓑ 8 square inches
- Ⓒ 12 square inches

76 Knows denominator, fraction value relationship

- A correct
- B the greater the denominator, the greater the unit fraction
- C the greater the denominator, the greater the unit fraction

77 Which has the same value as $\frac{3}{3}$?

- Ⓐ 1
- Ⓑ 3
- Ⓒ 6

- 78** Understand relationship of multiplication & division
- A** addition fact in multiplication fact family
 - B** correct
 - C** multiplication fact that doesn't belong in family

Scoring Key: Part 1

Item No.	Correct Answer	GLCE	Type	Description
1	C	N.ME.02.02	Core-NC	Read and write numbers to 1000
2	C	N.ME.02.02	Core-NC	Read and write numbers to 1000
3	A	N.ME.02.02	Core-NC	Read and write numbers to 1000
4	C	N.ME.02.03	Core-NC	Compare and order numbers to 1000
5	A	N.ME.02.03	Core-NC	Compare and order numbers to 1000
6	C	N.ME.02.03	Core-NC	Compare and order numbers to 1000
7	A	N.MR.02.07	Core-NC	Find distance between numbers on a number line
8	C	N.MR.02.07	Core-NC	Find distance between numbers on a number line
9	B	N.MR.02.07	Core-NC	Find distance between numbers on a number line
10	C	N.FL.02.10	Core-NC	Add fluently two numbers through 99
11	A	N.FL.02.10	Core-NC	Add fluently two numbers through 99
12	C	N.FL.02.10	Core-NC	Add fluently two numbers through 99
13	B	N.FL.02.11	Core-NC	Estimate sum of two numbers with three digits
14	C	N.FL.02.11	Core-NC	Estimate sum of two numbers with three digits
15	A	N.FL.02.11	Core-NC	Estimate sum of two numbers with three digits
16	C	N.ME.02.19	Core-NC	Recognize, name and write halves, thirds and fourths
17	C	N.ME.02.19	Core-NC	Recognize, name and write halves, thirds and fourths
18	C	N.ME.02.19	Core-NC	Recognize, name and write halves, thirds and fourths
19	A	M.PS.02.02	Core-NC	Compare, add, subtract lengths
20	B	M.PS.02.02	Core-NC	Compare, add, subtract lengths
21	C	M.PS.02.02	Core-NC	Compare, add, subtract lengths
22	A	M.PS.02.10	Core-NC	Solve simple word problems in length & money
23	A	M.PS.02.10	Core-NC	Solve simple word problems in length & money
24	C	M.PS.02.10	Core-NC	Solve simple word problems in length & money

NC=Non Calculator

Scoring Key: Part 2

Item No.	Correct Answer	GLCE	Type	Description
25	A	N.MR.02.09	Core	Solve story problems with objects & pictures
26	B	N.MR.02.09	Core	Solve story problems with objects & pictures
27	C	N.MR.02.09	Core	Solve story problems with objects & pictures
28	B	N.MR.02.14	Core	Represent x using area and array models
29	B	N.MR.02.14	Core	Represent x using area and array models
30	C	N.MR.02.14	Core	Represent x using area and array models
31	C	N.ME.02.20	Core	Place 0 and halves on number line; relate to a ruler
32	B	N.ME.02.20	Core	Place 0 and halves on number line; relate to a ruler
33	C	N.ME.02.20	Core	Place 0 and halves on number line; relate to a ruler
34	A	M.UN.02.05	Core	Tell time using A.M. and P.M.
35	A	M.UN.02.05	Core	Tell time using A.M. and P.M.
36	C	M.UN.02.05	Core	Tell time using A.M. and P.M.
37	B	M.UN.02.07	Core	Read & write money using decimal notations
38	C	M.UN.02.07	Core	Read & write money using decimal notations
39	B	M.UN.02.07	Core	Read & write money using decimal notations
40	A	G.SR.02.05	Core	Classify familiar plane and solid objects
41	A	G.SR.02.05	Core	Classify familiar plane and solid objects
42	B	G.SR.02.05	Core	Classify familiar plane and solid objects

Scoring Key: Part 3

Item No.	Correct Answer	GLCE	Type	Description
43	A	N.MR.02.13	Core	Recognize x as total number in a set of equal groups
44	B	N.MR.02.13	Core	Recognize x as total number in a set of equal groups
45	C	N.MR.02.13	Core	Recognize x as total number in a set of equal groups
46	B	N.ME.02.18	Core	Use common unit fractions
47	B	N.ME.02.18	Core	Use common unit fractions
48	C	N.ME.02.18	Core	Use common unit fractions
49	B	M.UN.02.01	Core	Measure lengths to nearest whole unit
50	C	M.UN.02.01	Core	Measure lengths to nearest whole unit
51	B	M.UN.02.01	Core	Measure lengths to nearest whole unit
52	A	M.UN.02.06	Core	Use the concept of duration of time
53	C	M.UN.02.06	Core	Use the concept of duration of time
54	B	M.UN.02.06	Core	Use the concept of duration of time
55	C	M.TE.02.11	Core	Determine perimeters of rectangles & triangles
56	A	M.TE.02.11	Core	Determine perimeters of rectangles & triangles
57	A	M.TE.02.11	Core	Determine perimeters of rectangles & triangles
58	A	G.GS.02.01	Core	Identify, describe, compare 2-D & 3-D shapes
59	C	G.GS.02.01	Core	Identify, describe, compare 2-D & 3-D shapes
60	B	G.GS.02.01	Core	Identify, describe, compare 2-D & 3-D shapes
61	C	G.GS.02.04	ExtendedCore	Know curved/straight lines, curved/flat surfaces
62	C	M.UN.02.03	ExtendedCore	Measure area using non-standard units
63	B	M.UN.02.09	ExtendedCore	Read temperature in degrees Fahrenheit
64	B	N.FL.02.06	ExtendedCore	Decompose 100 into addition pairs, e.g., $99 + 1$
65	C	N.ME.02.01	ExtendedCore	Count to 1000 by 1s, 10s, and 100s
66	B	N.MR.02.08	ExtendedCore	Solve problem such as $42 + \underline{\quad} = 57$
67	A	N.MR.02.16	ExtendedCore	Given situation with groups of equal size, represent
68	B	D.RE.02.01	FutureCore	Make pictographs using a scale representation
69	C	D.RE.02.02	FutureCore	Read, interpret pictographs with scales of 2 or 3
70	A	D.RE.02.03	FutureCore	Solve problems using info in pictographs
71	A	G.GS.02.02	FutureCore	Putting together, taking apart 2-D & 3-D shapes
72	B	G.LO.02.07	FutureCore	Find, name points using simple coordinate systems
73	C	G.TR.02.06	FutureCore	Recognize transformed shapes
74	A	M.PS.02.08	FutureCore	Add and subtract money in mixed units
75	B	M.TE.02.04	FutureCore	Find the area of a rectangle using whole units
76	A	N.ME.02.21	FutureCore	Knows denominator, fraction value relationship
77	A	N.ME.02.22	FutureCore	Knows fraction equivalences of one
78	B	N.MR.02.15	FutureCore	Understand relationship of multiplication & division